

Section 9

Occupant Protection, 2001

Occupant Protection 1993 - 2001	9.2
Seatbelt Use	9.3
Seatbelt Use by Age and County	9.4
Seatbelt Use by Gender, Age and Occupant Placement	9.6
Children and Restraint Use.....	9.8
Ejection by Seatbelt Use.....	9.9
Air Bags.....	9.10
Safety Restraint Laws and Recommendations	9.11

TABLES

Table 9.01 Seatbelt Use by Age and County, Utah 2001

Table 9.02 Seatbelt Use by Gender, Utah 2001

Table 9.03 Seatbelt Use by Occupant Placement, Utah 2001

Table 9.04 Seatbelt Use by Age Group, Utah 2001

Table 9.05 Seating Location and Restraint Status of Children Under the Age of 9 Years, Utah 2001

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 2001

FIGURES

Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 2001

Figure 9.02 Seatbelt Use for All Occupants, Injured Occupants and Fatalities, Utah 2001

Figure 9.03 Ejection by Seatbelt Use, Utah 2001

Note:

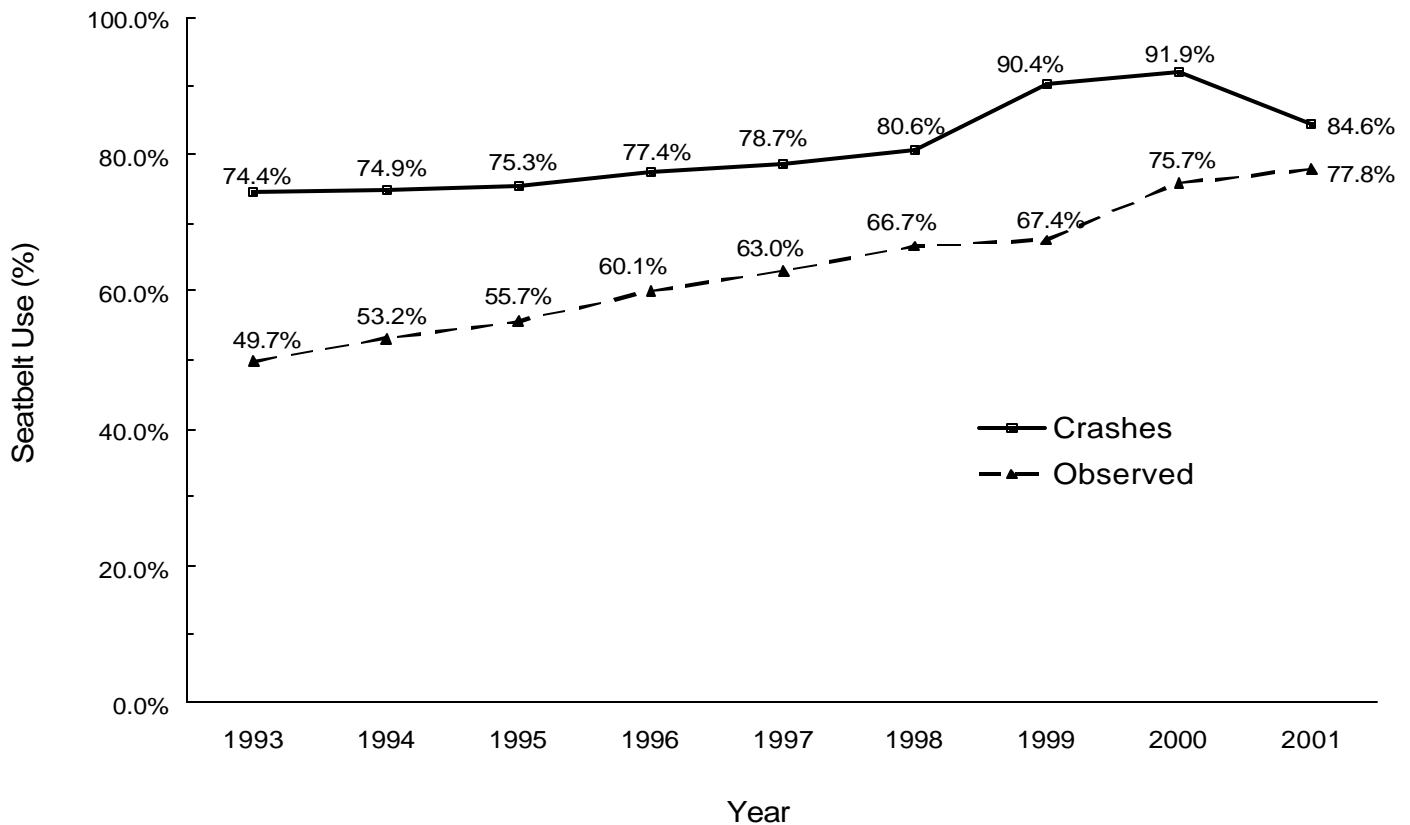
Seatbelt Use - Seatbelt use is reported for occupants in a passenger car, a light truck or van. Occupants are coded as wearing a seatbelt if they reported using a shoulder/lap belt, lap belt or a child safety seat (occupants using only a shoulder strap were reported to be unbelted) at the scene of the crash. In the majority of cases, seatbelt use as recorded by the investigating officer is self-reported by the crash occupant. It is possible that crash occupants may report using a seatbelt when they were not, in order to avoid a citation or fine, thus over-inflating the seatbelt use rate. In the case of fatal or severe injury crashes, the officer will determine the seatbelt use.

Observational Study - Each year the Utah Department of Public Safety's Highway Safety Office conducts a seatbelt usage observational study. Study sites are located throughout the state where trained observers can record seatbelt use for drivers and front seat passengers of slow moving or stopped vehicles. According to the 2001 study, 77.8% of Utah's drivers and front seat passengers were buckled up and 89.0% of children under the age of 10 years were restrained while riding in a motor vehicle.

Occupant Protection 1993-2001

Figure 9.01 compares the percentage of seatbelt use reported in crashes to observational studies for drivers and front seat passengers. Seatbelt use by drivers and front-seat passengers has increased most years in both crash and observational studies. The difference between crash seatbelt use rates reported by crash participants or the investigating officer at the crash scene, and observed seatbelt use rates, may be due to over-reporting of seatbelt use by crash participants at the scene of a crash.

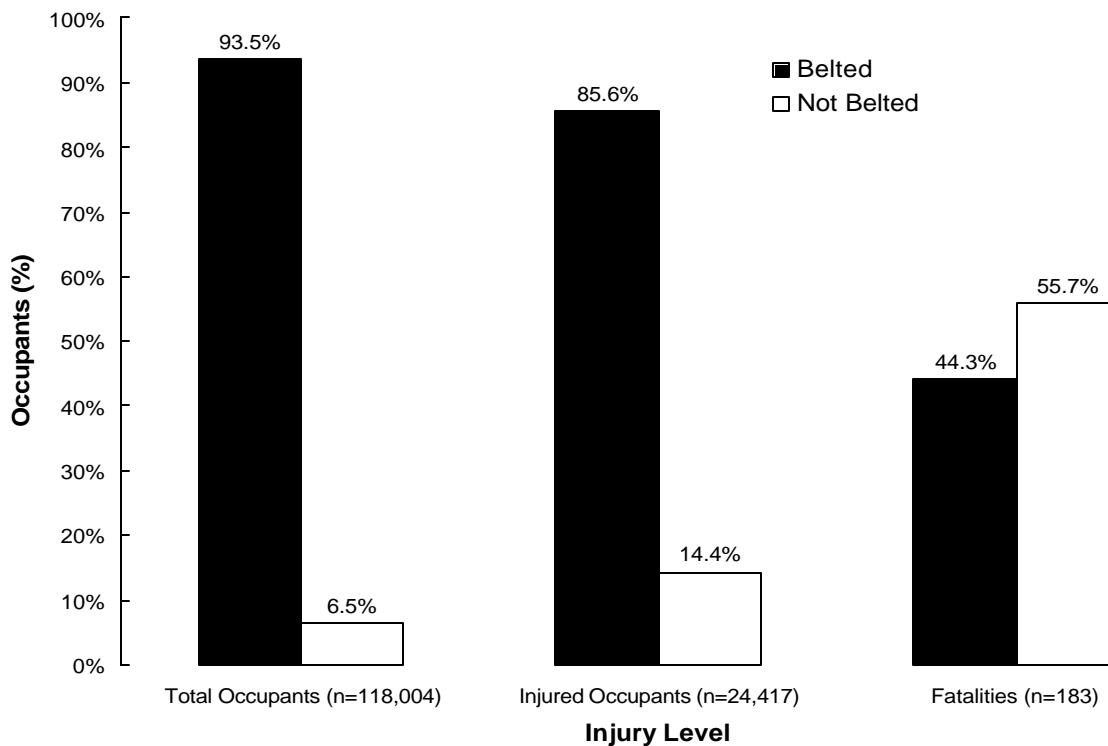
Figure 9.01 Percentage of Drivers and Front Seat Passengers Wearing Seatbelts in Crashes and Observational Studies, Utah 1993 - 2001



Seatbelt Use

Statewide seatbelt use for all crash occupants (including back seat occupants) as reported to crash investigating officers is shown in Figure 9.02. The majority (93.5%) of occupants involved in a crash and the majority (85.6%) of the injured occupants reported using a seatbelt. Only slightly more than two-fifths (44.3%) of the fatally injured occupants were belted. Seatbelts are an important safety feature; occupants who were not wearing a seatbelt were 17 times more likely to sustain a fatal injury than occupants who were wearing a seatbelt.

Figure 9.02 Seatbelt Use by Total Occupants, Injured Occupants, and Fatalities, Utah 2001



Seatbelt Use by Age and County

Table 9.01 shows the self-reported seatbelt use of occupants by age and county. Davis County had the highest percentage of seatbelt use (96.0%), while Grand had the lowest percentage of seatbelt use (79.4%).

Table 9.01 Seatbelt Use by Age and County, Utah 2001

County	Seatbelt Use	Age Group														Total	Percent
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 +	Unknown			
Beaver	Belted	28	22	33	87	60	36	56	62	45	23	18	7	3	480	89.2%	
	Unbelted	1	2	4	18	11	4	6	8	1	2	0	0	1	58	10.8%	
Box Elder	Belted	76	70	79	415	272	117	227	223	116	83	48	16	33	1,775	90.1%	
	Unbelted	4	9	17	54	36	18	30	13	8	5	0	1	1	196	9.9%	
Cache	Belted	184	143	146	1,095	918	428	482	489	264	149	110	58	55	4,521	92.1%	
	Unbelted	3	4	26	108	105	41	27	30	12	15	5	3	9	388	7.9%	
Carbon	Belted	30	21	24	135	78	63	69	62	51	37	27	11	16	624	88.1%	
	Unbelted	2	4	0	33	18	2	9	3	5	2	4	0	2	84	11.9%	
Daggett	Belted	2	0	2	5	5	3	5	8	4	4	2	1	1	42	93.3%	
	Unbelted	0	0	0	1	1	0	0	1	0	0	0	0	0	3	6.7%	
Davis	Belted	551	402	391	2,676	1,567	903	1,440	1,207	716	360	240	99	117	10,669	96.0%	
	Unbelted	10	14	27	126	88	46	50	37	20	14	10	3	5	450	4.0%	
Duchesne	Belted	32	26	30	102	77	43	104	75	42	35	21	2	15	604	84.7%	
	Unbelted	1	2	5	47	18	7	12	9	3	2	2	1	0	109	15.3%	
Emery	Belted	20	16	16	109	55	47	64	50	52	34	17	7	14	501	87.7%	
	Unbelted	3	1	5	22	9	7	4	12	2	2	1	1	1	70	12.3%	
Garfield	Belted	7	3	7	37	25	29	14	22	27	12	5	2	10	200	87.0%	
	Unbelted	2	1	2	5	5	5	2	2	1	2	1	2	0	30	13.0%	
Grand	Belted	12	7	18	47	69	29	42	44	29	21	16	3	10	347	79.4%	
	Unbelted	0	2	5	20	25	12	10	8	4	0	2	2	0	90	20.6%	
Iron	Belted	97	51	55	350	294	156	165	152	141	69	38	25	30	1,623	86.2%	
	Unbelted	4	6	14	85	51	16	23	20	12	14	6	3	5	259	13.8%	
Juab	Belted	25	30	27	82	63	43	65	62	37	29	16	8	17	504	83.2%	
	Unbelted	2	2	9	36	14	7	10	7	5	5	2	1	2	102	16.8%	
Kane	Belted	14	17	23	37	42	25	41	30	30	18	8	2	7	294	88.8%	
	Unbelted	2	2	1	10	9	3	4	3	2	0	1	0	0	37	11.2%	
Millard	Belted	41	27	39	138	111	61	94	74	61	35	38	11	2	732	90.1%	
	Unbelted	0	2	1	34	16	6	9	4	1	2	4	1	0	80	9.9%	

Table 9.01 Seatbelt Use by Age and County, Utah 2001 (continued)

County	Seatbelt Use	Age Group													Total	Percent
		00 - 04	05 - 09	10 - 14	15 - 19	20 - 24	25 - 29	30 - 39	40 - 49	50 - 59	60 - 69	70 - 79	80 +	Unknown		
Morgan	Belted	7	2	13	65	35	15	29	27	13	12	4	2	4	228	91.6%
	Unbelted	0	1	0	8	6	1	4	0	0	1	0	0	0	21	8.4%
Piute	Belted	2	3	2	6	6	3	4	9	4	2	7	2	1	51	86.4%
	Unbelted	0	0	0	2	4	1	0	0	0	0	0	1	0	8	13.6%
Rich	Belted	9	5	5	25	30	10	19	24	10	8	6	1	8	160	89.9%
	Unbelted	0	0	1	9	3	0	2	0	0	1	1	0	1	18	10.1%
Salt Lake	Belted	2,101	1,484	1,403	9,367	8,101	5,070	7,418	5,851	3,593	1,638	1,016	495	811	48,348	95.3%
	Unbelted	50	71	97	666	532	216	304	206	123	43	34	9	46	2,397	4.7%
San Juan	Belted	15	8	15	64	61	30	50	52	39	30	20	4	12	400	85.5%
	Unbelted	1	2	4	26	13	3	8	1	6	3	0	0	1	68	14.5%
Sanpete	Belted	33	23	31	164	93	35	85	80	58	24	26	10	13	675	85.0%
	Unbelted	3	1	5	53	18	10	4	9	2	6	1	4	3	119	15.0%
Sevier	Belted	31	23	24	104	130	79	90	89	50	38	26	9	20	713	82.6%
	Unbelted	5	2	8	46	26	16	19	11	4	3	3	0	7	150	17.4%
Summit	Belted	55	38	50	261	240	162	252	236	127	59	33	4	26	1,543	93.2%
	Unbelted	2	1	5	37	16	6	9	16	8	3	2	0	7	112	6.8%
Tooele	Belted	63	46	31	191	169	104	180	167	97	50	44	10	53	1,205	90.1%
	Unbelted	2	4	6	27	24	17	15	11	11	2	4	2	8	133	9.9%
Uintah	Belted	40	14	40	196	99	58	97	85	64	31	22	9	11	766	81.5%
	Unbelted	2	10	19	48	35	13	21	14	1	6	1	2	2	174	18.5%
Utah	Belted	948	531	521	3,596	3,820	1,821	2,209	1,469	974	534	362	153	336	17,274	93.0%
	Unbelted	20	41	59	408	313	116	129	83	46	38	15	13	28	1,309	7.0%
Wasatch	Belted	55	31	34	148	135	97	145	118	83	32	13	13	29	933	92.5%
	Unbelted	3	4	4	20	15	6	10	5	5	1	1	1	1	76	7.5%
Washington	Belted	190	136	141	997	542	278	449	419	290	194	191	108	98	4,033	90.1%
	Unbelted	10	13	28	145	74	29	53	28	16	21	15	10	1	443	9.9%
Wayne	Belted	4	3	6	8	8	10	7	10	10	7	6	2	4	85	85.9%
	Unbelted	0	2	0	2	3	1	4	1	0	0	1	0	0	14	14.1%
Weber	Belted	494	303	335	2,346	1,711	1,029	1,528	1,338	817	477	376	146	143	11,043	94.6%
	Unbelted	17	12	21	161	144	55	86	71	22	14	15	6	9	633	5.4%
Statewide	Belted	5,166	3,485	3,541	22,853	18,816	10,784	15,430	12,534	7,844	4,045	2,756	1,220	1,899	110,373	93.5%
	Unbelted	149	215	373	2,257	1,632	664	864	613	320	207	131	66	140	7,631	6.5%

Seatbelt Use

by Gender, Age and Occupant Placement

Female and male crash occupants reported similar seatbelt use (approximately 90%). For injured occupants and fatally injured occupants, the reported seatbelt use was greater for females than for males. However, the reported seatbelt use for fatalities was almost half of that for total crash occupants regardless of gender (Table 9.02).

Table 9.02 Seatbelt Use by Gender, Utah 2001

Gender	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Female	Belted	52,075	94.2%	12,300	88.1%	38	47.5%
	Unbelted	3,214	5.8%	1,665	11.9%	42	52.5%
Male	Belted	58,246	93.0%	8,598	82.3%	43	41.7%
	Unbelted	4,417	7.0%	1,844	17.7%	60	58.3%
Total	Belted	110,321	93.5%	20,898	85.6%	81	44.3%
	Unbelted	7,631	6.5%	3,509	14.4%	102	55.7%
Grand Total		117,952	100.0%	24,407	100.0%	183	100.0%

Note: Gender was not recorded for all occupants.

Reported seatbelt use did not vary substantially by seating location (Table 9.03). Among total, injured, and fatally injured occupants, drivers reported the highest seatbelt use compared to other seating locations.

Table 9.03 Seatbelt Use by Occupant Placement, Utah 2001

Placement	Seatbelt Status	Total Occupants		Injured Occupants		Fatalities	
		#	%	#	%	#	%
Driver	Belted	75,594	94.5%	14,088	88.0%	57	49.1%
	Unbelted	4,423	5.5%	1,921	12.0%	59	50.9%
Front Seat Passenger	Belted	19,940	90.9%	4,562	81.7%	20	45.5%
	Unbelted	1,993	9.1%	1,025	18.3%	24	54.5%
Back Seat Passenger	Belted	14,839	92.4%	2,258	80.0%	4	17.4%
	Unbelted	1,215	7.6%	563	20.0%	19	82.6%
Total Belted		110,373	93.5%	20,908	85.6%	81	44.3%
Total Unbelted		7,631	6.5%	3,509	14.4%	102	55.7%
Grand Total		118,004	100.0%	24,417	100.0%	183	100.0%

Seatbelt use varied slightly by age (Table 9.04). For total occupants, children under the age of 5 years had the highest rate of reported seatbelt use (97.2%), whereas, the age group 10 to 14 years (90.5%) and teenagers aged 15 to 19 years (91.0%) reported the lowest percentage of seatbelt use. Among injured occupants, the age group 55 to 59 years reported the highest seatbelt use (93.8%) and those aged 10 to 14 years reported the lowest (79.3%). For fatally injured occupants, the age groups 5 to 9 years and over 85 years reported to have the highest seatbelt use (100%) and those aged 10 to 14 years the lowest (0%).

Although the reported seatbelt or child safety seat use rate for children under the age of 10 years was often one of the highest for all age groups, it does not indicate that children were properly restrained. Unfortunately, several statewide surveys have found that child safety seats are often placed incorrectly in vehicles. In addition, young children are often moved to adult sized seatbelts prematurely when a booster seat is more appropriate. (see page 9.11 for Safety Recommendations).

Table 9.04 Seatbelt Use by Age Group, Utah 2001

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	5,315	97.2%	657	91.9%	6	33.3%
05 - 09	3,700	94.2%	685	83.1%	1	100.0%
10 - 14	3,914	90.5%	811	79.3%	4	0.0%
15 - 19	25,110	91.0%	4,996	79.5%	31	29.0%
20 - 24	20,448	92.0%	4,396	82.1%	22	45.5%
25 - 29	11,448	94.2%	2,435	87.6%	16	50.0%
30 - 34	8,769	94.6%	1,816	88.1%	15	53.3%
35 - 39	7,525	94.8%	1,591	88.2%	10	20.0%
40 - 44	7,202	95.0%	1,518	89.6%	15	33.3%
45 - 49	5,945	95.7%	1,309	91.4%	7	42.9%
50 - 54	4,951	95.8%	1,117	91.0%	15	86.7%
55 - 59	3,213	96.5%	694	93.8%	6	16.7%
60 - 64	2,386	95.6%	543	92.1%	6	50.0%
65 - 69	1,866	94.6%	436	89.0%	5	60.0%
70 - 74	1,567	95.6%	340	92.4%	8	50.0%
75 - 79	1,320	95.3%	336	92.9%	9	44.4%
80 - 84	827	95.5%	195	91.3%	4	50.0%
85 +	459	93.7%	142	89.4%	2	100.0%
Missing	2,039	93.1%	400	83.0%	1	100.0%
Grand Total	118,004	93.5%	24,417	85.6%	183	44.3%

Children and Restraint Use

The proportion of children under the age of 9 years who were reported as unbelted increased with increasing age (Table 9.05) The majority of children under the age of 2 years (85.6%) were in child safety seats at the time of the crash, compared to 58.9% of children aged 2 to 4 years. Children under the age of 2 years were 4 times more likely to be in a child safety seat than children between the ages of 2 to 4 years. The majority (94.3%) of children between the ages 5 to 8 years were belted or in a child safety seat. Child safety seat usage was highest for children in the back seat; children in the back seat were 4 times more likely to be in a child safety seat than children in the front seat.

Utah's Child Restraint Law requires all children under the age of 19 years to be properly restrained when riding in a motor vehicle. In addition, children age 4 years and under must be restrained in a child safety seat (see page 9.11 for Safety Laws and Recommendations).

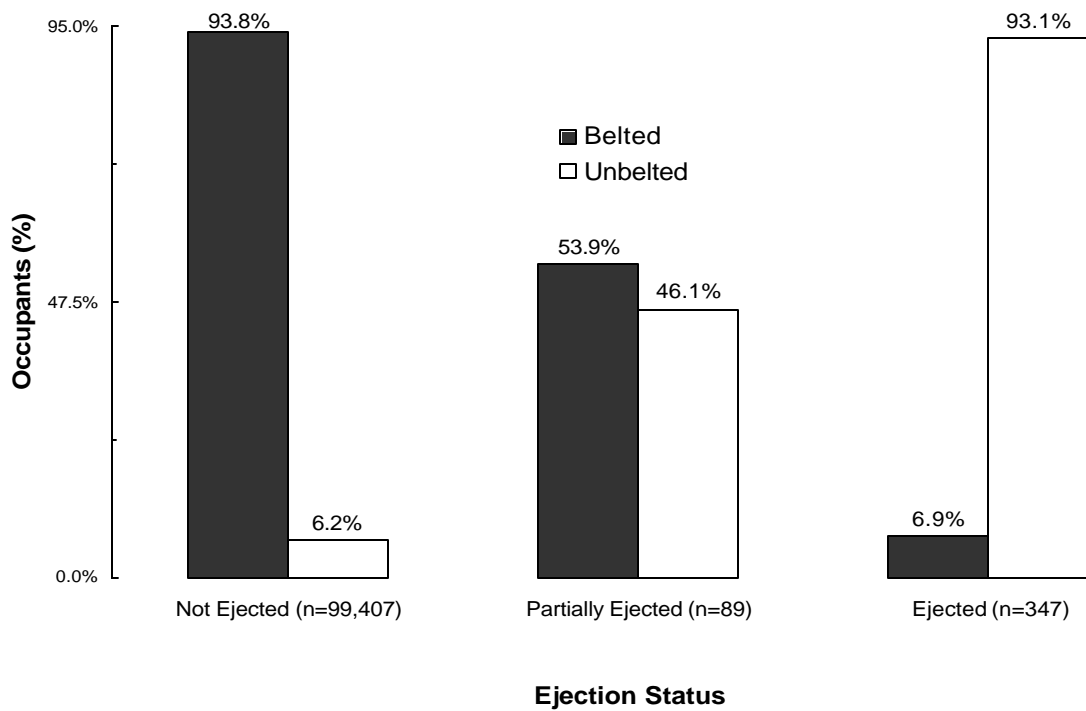
Table 9.05 Seating Location and Restraint Status for Children Under Age 9 Years, Utah 2001

Seating Location Seatbelt Status		Ages 0 - 1		Ages 2 - 4		Ages 5 - 8		Total
		#	%	#	%	#	%	
Front Middle	Child Safety Seat	26	70.3%	26	28.0%	5	4.9%	57
	Other Belted	7	18.9%	60	64.5%	77	75.5%	144
	Unbelted	4	10.8%	7	7.5%	20	19.6%	31
Front Right	Child Safety Seat	83	72.2%	97	34.4%	18	3.0%	198
	Other Belted	25	21.7%	156	55.3%	519	87.1%	700
	Unbelted	7	6.1%	29	10.3%	59	9.9%	95
Back Seat	Child Safety Seat	1,569	86.7%	1,848	62.1%	258	11.1%	3,675
	Other Belted	220	12.2%	1,040	35.0%	1,982	84.9%	3,242
	Unbelted	20	1.1%	86	2.9%	94	4.0%	200
Total	Child Safety Seat	1,678	85.6%	1,971	58.9%	281	9.3%	3,930
	Other Belted	252	12.9%	1,256	37.5%	2,578	85.0%	4,086
	Unbelted	31	1.6%	122	3.6%	173	5.7%	326
Grand Total		1,961	100.0%	3,349	100.0%	3,032	100.0%	8,342

Ejection by Seatbelt Use

Figure 9.03 shows an inverse relationship between ejection from a motor vehicle and seatbelt use. The majority (93.1%) of the occupants ejected from a motor vehicle were reported as not using a seatbelt, compared to only 6.2% of occupants not ejected from a motor vehicle.

Figure 9.03 Ejection by Seatbelt Use, Utah 2001



Air Bags

Table 9.06 shows the age of occupants whose air bag deployed and the percentage belted. A majority of the total and injured occupants whose air bag deployed were wearing a seatbelt. However, only 62.5% of fatalities whose air bag deployed were wearing a seatbelt.

Table 9.06 Percentage of Seatbelt Use for Occupants Whose Air Bag Deployed, Utah 2000

Age Category	Total Occupants		Injured Occupants		Fatalities	
	Total	% Belted	Total	% Belted	Total	% Belted
00 - 04	8	87.5%	3	100.0%	0	0.0%
05 - 09	17	88.2%	15	86.7%	0	0.0%
10 - 14	35	82.9%	22	86.4%	0	0.0%
15 - 19	441	89.3%	278	88.1%	4	50.0%
20 - 24	496	89.1%	304	86.2%	1	100.0%
25 - 29	238	92.9%	153	91.5%	0	0.0%
30 - 34	144	88.9%	89	85.4%	0	0.0%
35 - 39	132	90.9%	83	90.4%	2	0.0%
40 - 44	115	91.3%	63	88.9%	1	100.0%
45 - 49	107	92.5%	72	91.7%	0	0.0%
50 - 54	97	88.7%	65	86.2%	0	0.0%
55 - 59	52	92.3%	37	91.9%	1	100.0%
60 - 64	44	97.7%	31	96.8%	1	0.0%
65 - 69	44	88.6%	34	85.3%	1	0.0%
70 - 74	39	92.3%	26	92.3%	2	0.0%
75 - 79	37	100.0%	24	100.0%	1	100.0%
80 - 84	16	81.3%	9	77.8%	2	50.0%
85 +	11	100.0%	8	100.0%	0	0.0%
Missing	33	90.9%	20	85.0%	0	0.0%
Grand Total	2,106	90.4%	1,336	88.6%	16	62.5%

Safety Restraint Laws And Recommendations

Safety Restraint Use Law

Utah law requires all motor vehicle occupants to be wearing a seatbelt when traveling in a motor vehicle. The purpose of this law is to protect Utahns from needless death and injury and reduce taxpayer costs resulting from traffic collisions. The law is a secondary law which means a person may be issued a citation only when the police officer has stopped the vehicle for another reason. Any person who violates this law is subject to a fine of \$45, reduced to \$15 upon completion of a traffic safety educational class. Exceptions to the law include, delivery personnel, rural letter carriers, persons driving vehicles used for farm purposes, individuals in motor vehicles manufactured before July 1, 1966, and individuals with physically disabling or medical condition which would prevent appropriate use of a safety belt. Visitors from outside Utah are also required to wear a seatbelt when traveling in Utah. The law is primary for drivers and passengers under age 19 years. Children age 4 years and under must ride in an approved child safety seat and children aged 5 to 19 years must ride in an approved child safety seat or seatbelt. This is a primary law which means a law enforcement officer can stop a vehicle if he/she notices children are not properly restrained. A fine can be issued solely for not restraining a child under the age of 19 years and violators will be subject to a fine of not more than \$45. The first offense shall be dismissed if the driver shows proof of acquiring a child safety seat or seatbelt. The driver is responsible for unrestrained occupants under the age of 16 in the vehicle, whether or not they are the parents of the unrestrained child.

Child Safety Seat Recommendations

- Infants should be placed in a rear facing child safety seat until they are at least 20 pounds AND 1 year of age.
- Children over 1 year of age weighing 20 - 40 pounds should ride in forward facing child safety seats.
- Older children (approximately 4-8 years of age) should ride in belt-positioning booster seats until they are approximately 80 pounds and can use an adult-size lap and shoulder belt system.
- Avoid using secondhand child safety seats especially if it does not have the original instruction booklet, if it has been used in a crash, if it does not have the manufacturer's date and model number on it, or if it is more than six years old.
- If your car has lap/shoulder combination belts, it could be critical to use a locking clip to properly secure your safety seat to the car. Consult the vehicle owner's manual.
- The safest place for any child age 12 and under is in the back seat of the vehicle.
- Children should never be held on an adult's lap. The force of the collision would tear a child from the adult's arms. If the adult is not wearing a safety belt, the child could be crushed between the adult's body and the dashboard.

Seatbelt Recommendations

- Always use both the lap and shoulder belt. When worn properly, the shoulder belt should fit across the collar bone and the lap belt should fit low over the hips.
- Never place the shoulder strap under your arm or behind your back.
- Use belt-positioning booster seats for children who have outgrown their toddler safety seat (at about 4 years of age and 40 pounds). Booster seats help position an adult-size seatbelt for a safer fit on children.

Air Bag Safety Recommendations

- NEVER place a rear facing child safety seat in the front seat of a vehicle with a passenger side air bag.
- Place children age 12 years and younger in the back seat in an age and size-appropriate child safety seat or seatbelt.
- If you are the driver, keep 10 - 12 inches between you and the steering wheel.
- Move the front passenger seat as far back as possible.
- Shorter drivers, who cannot get 10 inches from the steering wheel and still comfortably reach the pedals can purchase pedal extender (call (813) 932-8566 for more information).
- Air bags are "supplemental" to seatbelts. Be sure you and your passengers use both the lap and shoulder portion of the seatbelt and children ride in appropriate child safety restraints in the back seat.
- If you MUST disconnect your vehicle's air bag contact Utah Highway Safety at (801) 293 -2480 or log onto the National Highway Traffic Safety Administration website at <http://www/nhtsa.dot.gov> for information.